Remarks

Applicants respectfully request reconsideration of the application.

Claims 1 and 17 are provisionally rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1 and 30 of co-pending application 10/836,094. The undersigned acknowledges this provisional rejection, but defers action on it as premature since the '094 application has not issued.

Claims 1-21 are rejected under 35 U.S.C. Section 101 as not falling within one of the four statutory categories of invention. While Applicants respectfully traverse this rejection, it is moot in view of the change in claim language above.

Claims 1, 2, 14, 15, 16 and 20-21 are rejected under 35 U.S.C. Section 102(e) as being anticipated by U.S. patent 5,781,653 to Okubo.

Claim 1

Okubo teaches an apparatus that determines a "copying inhibited" document by detecting a "copying inhibited pattern." It does not teach the claimed method of determining whether the printed image is a copy or an original because detecting "a copy inhibited pattern" on a document in Okubo provides no indication of whether the document is a copy or an original. For example, whether a document is an original or a copy, it can have the copy inhibited pattern, and as such, detection of the pattern does not indicate whether the document is an original or a copy. Okubo does not provide pertinent teaching for claim 1.

The Office asserts that Okubo teaches, for example, "the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable," because allegedly "as a result of the steps of copy-inhibited pattern determination...any alteration of these print structures make the machine readable signal, or pattern detectable." There is no teaching in Okubo that a copy operation makes a change in the copy inhibited pattern that makes it more or less detectable. There is simply no teaching in Okubo that the copy inhibited pattern is evaluated to determine whether a document is a copy or an original as claimed. Instead, Okubo simply teaches how to detect the pattern, and detection does not indicate whether the document from which it is detected is a copy or an original. Therefore, for at least these reasons, claim 1 is not anticipated.

Similar rational applies to claim 14.

Claim 15

Regarding claim 15, Okubo does not teach: "using a set of two or more print structures that change in response to a copy operation, the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable" and "using a programmed computing device to create a metric to detect the convergence or divergence from an image scanned of a suspect printed object to determine whether the suspect printed object is a copy or an original." Okubo teaches how to detect a copy-inhibited pattern. Detection of this pattern does not determine whether the document from which it is detected is a copy or an original. Okubo's objective is simply to detect a copy-inhibited pattern, without regard to whether that pattern is in a copy or an original. Therefore, it has no teaching regarding creating a metric "to determine whether the suspect printed object is a copy or an original" as claimed.

Similar rationale applies to claim 16.

Claims 20-21 are not anticipated by Okubo for similar reasons as claims 15 and 16, respectively.

The remaining rejections cite secondary references that fail to teach the elements of the independent claims that are missing from Okubo. Therefore the combination cannot render these claims obvious. Additional rationale indicating why the Section 103(a) rejections follows below.

Claim 3 is rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and USP 2,748,190 to Yule. The cited teaching of Yule fails to provide any pertinent information about out of gamut colors in the context of claim 3.

Claim 4 is rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and USP 6,434,322 to Kimura et al. Kimura teaches an embedding technique in which copy control information is embedded by changing luminance. This change, which is made explicitly for embedding copy control information, is unrelated to a change in luminance of an embedded auxiliary signal that is in response to a copy operation as claimed. Kimura is not concerned with evaluating a machine readable signal

to determine whether a printed object is a copy or an original. Therefore, the cited teachings are not relevant to claim 4.

Claim 5 is rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and USP 6,198,545 to Ostromoukhov et al. The Office is correct in noting that certain variations in the halftoning period are useful to prevent non authorized copies of images as noted in Ostromoukhov, but Ostromoukhov does not teach a method for evaluating these variations in a machine readable signal to determine whether a printed object is a copy or an original. This reference further does not teach the elements of claim 1 missing from Okubo, and as such, the combination does not teach all of the elements of claim 5.

Claim 6 is rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and USP 5,687,297 to Coonan et al. Coonan's method is used for "tuning the appearance and controlling dot growth of bitmap images on a printing system." There is no suggestion of using this teaching for determining whether a printed object is a copy or an original.

Claims 7 and 8 are rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and USP 4,884,828 to Burnham et al. There is no teaching that the aliasing is used in conjunction with print structures of an embedded machine readable signal as recited in claim 7 to determine whether a printed object is a copy or an original. Regarding claim 8, neither reference teaches embedding an auxiliary signal by varying continuity of line structures.

Claims 9-10 are rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo, Burnham and USP 5.074,596 to Castagnoli. Burnham and Castagnoli fail to teach the elements of these claims missing from Okubo, and as such, even if all three references were combined, they would not teach all of the elements of these claims. There is no reasonable basis for combining the disparate teachings of these references to make the claimed invention of claims 9-10.

Claims 11, 12 and 13 are rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and USP 7,027,189 to Umeda. Umeda teaches a method of embedding a dot pattern, but fails to provide relevant teaching regarding detecting changes of print structures of an embedded auxiliary signal to determine whether a

printed document is a copy or an original. The combined teachings fail to teach all of the elements of claims 11-13.

Claims 17 and 19 are rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo and Yule. Okubo does not provide relevant teachings for claim 17 for reasons similar to those presented above for claim 1. Yule is not relevant, and there is no logical reason why one of ordinary skill would combine its teachings with Okubo. Even if one tried, it could not yield the invention of claim 17 because neither relate to determining from an auxiliary signal whether a document is an original or a copy.

Claim 18 is rejected under 35 U.S.C. Section 103(a) as being unpatenable over Okubo, Yule and Burnham. None of these references, even if combined, teach the elements of claim 18. There is no teaching that a moiré pattern in Burnham is embedded by varying continuity of line structures, and the moiré pattern is not taught to be machine readable either. There is no basis for combining these patterns with Okubo's copy inhibit pattern. Okubo's pattern is not used to determine whether a document is an original or a copy, and as such, is not relevant to the claim.

For the above reasons, the claims are patentable.

Respectfully submitted,

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DIGIMARC CORPORATION

CUSTOMER NUMBER 23735

Phone: 503-469-4800
FAX 503-469-4777

By /Joel R. Meyer/
Joel R. Meyer
Registration No. 37,677